

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [66 FR 16599 3/27/2001]

[Docket No. 98-NE-35-AD; Amendment 39-12156, AD 2001-06-09]

RIN 2120-AA64

Airworthiness Directives; General Electric Company CF6-80A3 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to General Electric Company (GE) CF6-80A3 series turbofan engines, that currently requires initial and repetitive on-wing borescope inspections of the left hand aft engine mount link assembly for cracks, bearing migration, and bearing race rotation, and if necessary, replacement with serviceable parts. This AD requires initial and repetitive visual inspections of both left hand and right hand aft engine mount link assemblies for separations, cracks, and bearing race migration. Cracked or separated parts will have to be replaced prior to further flight. If spherical bearing race migration is discovered, a borescope inspection for cracks is also required. If no cracks are discovered by the additional borescope inspection, assemblies would have a 75-cycle grace period for remaining in service before replacement. Finally, installation of improved aft engine mount link assemblies will constitute terminating action to the inspections of this AD. This amendment is prompted by a recent analysis of internal bearing friction and bearing migration and inspections, which revealed migrated spherical bearing races on two CF6-80A3 series and ten CF6-80C2 series aft engine mount links. The actions specified by this AD are intended to prevent aft engine mount link failure, which can result in adverse redistribution of the aft engine mount loads and possible aft engine mount system failure.

DATES: Effective May 1, 2001. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 1, 2001.

ADDRESSES: The service information referenced in this AD may be obtained from Rohr, Inc., 850 Lagoon Dr., Chula Vista, CA 91910-2098; telephone 619-691-3102, fax 619-498-7215. This information may be examined at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Ann Mollica, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone 781-238-7740, fax 781-238-7199.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 98-15-17, Amendment 39-10668 (63 FR 39489, July 23, 1998), which is applicable to GE Company CF6-80A3 series turbofan engines, was published in the **Federal Register** on July 20, 2000 (65 FR 44997). That action proposed to require initial and repetitive visual inspections of both left hand and right hand aft engine mount link assemblies for separations, cracks, and bearing race migration. Cracked or separated parts would have to be replaced prior to further flight. If spherical bearing race migration is discovered, a borescope inspection for cracks is also proposed. If no cracks are discovered by the additional borescope inspection, assemblies would have a 75-cycle grace period for remaining in service before

replacement. Finally, installation of improved aft engine mount link assemblies would constitute terminating action to the inspections.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comment received.

Comments

The sole commenter agrees with the technical intent and content of the proposed AD. However, the commenter believes that the economic affect on his company would be considerably greater than that stated in the preamble to the proposed AD.

The comment did not, however, include any analysis to support the conclusion that the commenter's company would incur a greater adverse economic affect. The elements of the economic analysis were reviewed with the manufacturer, GE Company. The NPRM stated that 120 worldwide and 59 domestic airplanes would be affected by the AD. However, that economic data included both CF6-80A1 and CF6-80A3 engines. Since the AD applies only CF6-80A3 engines, the actual numbers of engines affected by this AD include 108 worldwide and 59 that could be installed on airplanes of US registry. The economic analysis section has been changed accordingly. The FAA also notes that the current AD already requires inspection of the left hand aft mount link at intervals considerable shorter than this AD requires. Therefore, some of the cost cited in the economic analysis has already been required by the current AD.

After careful review of the available data, including the comment noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Economic Analysis

There are approximately 108 engines of the affected design in the worldwide fleet. The FAA estimates that 59 engines that could be installed on airplanes of US registry would be affected by this proposed AD, and that the cost of replacement link assemblies is approximately \$19,473 per engine. The FAA also estimates that it would take approximately 2 work hours per engine to accomplish the proposed interim inspections, and that the average labor rate is \$60 per work hour. Based on these figures, the total cost impact of the proposed AD over 3 years on US operators is estimated to be \$581,533 per year.

Regulatory Impact

This rule does not have federalism implications, as defined in Executive Order 13132, because it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Accordingly, the FAA has not consulted with state authorities prior to publication of this rule.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§39.13 [Amended]

2. Section 39.13 is amended by removing Amendment 39-10668 (63 FR 39489, July 23, 1998) and by adding a new airworthiness directive, Amendment 39-12156, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "av-info.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2001-06-09 General Electric Company: Amendment 39-12156. Docket 98-NE-35-AD. Supersedes AD 98-15-17, Amendment 39-10668.

Applicability: General Electric Company (GE) CF6-80A3 series turbofan engines, with left hand aft engine mount link assemblies, part numbers (P/N's) 224-1608-501, 224-1608-503, or 224-1608-505 installed, or right hand aft engine mount link assemblies, P/N's 224-1609-503, 224-1609-505, or 224-1609-507 installed. These engines are installed on but not limited to Airbus Industrie A310-200 series airplanes.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent aft engine mount link failure, which can result in adverse redistribution of the aft engine mount loads and possible aft engine mount system failure, accomplish the following:

Initial Inspection

(a) Inspect aft engine mount link assemblies as follows:

Not Previously Inspected

(1) Within 400 cycles-in-service (CIS) after the effective date of this AD, if **not previously inspected** using Rohr Alert Service Bulletin (ASB) CF6-80A3-NAC-A71-061, Revision 1, dated February 22, 2000, or Rohr Alert Service Bulletin (ASB) CF6-80A3-NAC-A71-061, dated April 16, 1999; **or**

Previously Inspected

(2) Within 400 cycles-since-last-inspection (CSLI), if **previously inspected** using Rohr ASB CF6-80A3-NAC-A71-061, Revision 1, dated February 22, 2000, or Rohr ASB CF6-80A3-NAC-A71-061, dated April 16, 1999.

(3) Visually inspect for: separations, cracks, and spherical bearing race migration.

(4) Inspect in accordance with the Accomplishment Instructions of Rohr ASB CF6-80A3-NAC-A71-061, Revision 1, dated February 22, 2000.

Cracked or Separated Parts

(5) If a crack or separation is discovered, prior to further flight, remove the cracked or separated aft engine mount link assembly and the attaching hardware from service, and replace with serviceable parts.

Removal of Aft Engine Mount Link Assemblies with Spherical Bearing Race Migration

(6) If an aft engine mount link assembly is found with spherical bearing race migration, but **no cracks or separations**, prior to further flight, do either of the following:

Removal

(i) Remove the aft engine mount link assembly and the attaching hardware from service and replace with serviceable parts; **or**

Additional Borescope Inspection of Aft Engine Mount Link Assemblies with Spherical Bearing Race Migration

(ii) Perform an additional borescope inspection for cracks in accordance with paragraphs (2)(D)(5) and (2)(G)(5) of the Accomplishment Instructions of Rohr ASB CF6-80A3-NAC-A71-061, Revision 1, dated February 22, 2000, and perform the following:

After Additional Borescope Inspection, If Parts Are Cracked

(A) If a crack indication is discovered, prior to further flight, remove the cracked aft engine mount link assembly and the attaching hardware from service, and replace with serviceable parts.

After Additional Borescope Inspection, If Parts Are Not Cracked (Grace Period)

(B) If crack indications are not discovered, within 75 CIS after the inspection performed in accordance with paragraph (a)(6)(ii) of this AD, remove the aft engine mount link assembly from service, and replace with serviceable parts.

Attaching Hardware

(iii) Attaching hardware may be returned to service after inspection in accordance with paragraphs 2(D)(6)(a) or 2(G)(6)(a) of Rohr ASB CF6-80A3-NAC-A71-061, Revision 1, dated February 22, 2000, only if inspection of the removed link shows no cracks or separations.

Note 2: Link attaching hardware includes the nuts, bolts and washers that secure the link.

Repetitive Inspections

(b) Thereafter, perform the actions required by paragraph (a) and associated subparagraphs at intervals not to exceed 400 CSLI.

Replacement with Improved Link Assemblies

(c) Replace aft engine mount link assemblies with improved aft engine mount link assemblies at the next engine shop visit (ESV), or prior to accumulating 29,000 engine cycles since new (CSN), whichever occurs first.

(1) Replace in accordance with the Accomplishment Instructions of Rohr ASB CF6-80A3-NAC-A71-064, dated April 4, 2000.

Left Hand Aft Engine Mount Link Assemblies

(2) Replace left hand aft engine mount link assemblies, P/N's 224-1608-501, 224-1608-503, or 224-1608-505, with improved left hand aft engine mount link assemblies, P/N's 224-1608-507 or 224-1608-509.

Right Hand Aft Engine Mount Link Assemblies

(3) Replace right hand aft engine mount link assemblies, P/N's 224-1609-503, 224-1609-505, or 224-1609-507, with improved right hand aft engine mount link assemblies, P/N's 224-1609-509 or 224-1609-511.

Terminating Action

(4) Installation of improved aft engine mount link assemblies in accordance with paragraph (c) and its subparagraphs constitutes terminating action to the inspections required by paragraphs (a) and (b) of this AD.

Alternate Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Engine Certification Office.

Special Flight Permits

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection requirements of this AD can be accomplished.

Incorporation by Reference

(f) The FAA has reviewed and approved the technical content of the listed Rohr Alert Service Bulletins ASBs. The actions required by this AD shall be done in accordance with the following Rohr ASBs:

Document No.	Pages	Revision	Date
ASB CF6-80A3-NAC- A71-061	1-11	Revision 1	February 22, 2000
Total pages: 11			
ASB CF6-80A3-NAC- A71-064	1-8	Original	April 4, 2000
Total pages: 8			

The incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552 (a) and 1 CFR part 51. Copies may be obtained from Rohr, Inc., 850 Lagoon Dr., Chula Vista, CA 91910-2098; telephone 619-691-3102, fax 619-498-7215. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA 01803-5299; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(g) This amendment becomes effective on May 1, 2001.

FOR FURTHER INFORMATION CONTACT: Ann Mollica, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone 781-238-7740, fax 781-238-7199.

Issued in Burlington, Massachusetts, on March 19, 2001.

Jay J. Pardee, Manager, Engine and Propeller Directorate, Aircraft Certification Service.